1. Introduction

Selective Call Forwarding (SCF), a CLASS[SM] Feature is an incoming call management feature that allows customers to define a special list of telephone numbers and a remote station. Incoming calls that are on the list will be forwarded to the remote station.

This Technical Reference (TR) defines Bellcore's view of generic requirements for SCF for residential and small business (non-Centrex) customers. It replaces Issue 1, June 1986 to reflect changes in activation/deactivation procedures and modifications to screening list editing procedures.

1.1 Background

SCF is a revenue-producing service intended for residential and business telephone users.

Interoffice application of the service depends on deployment of signaling methods capable of transmitting calling line identification.

1.2 High Level Feature Description

When SCF is activated on a particular line, certain terminating calls are forwarded to a designated remote station. Call Forwarding is provided whenever a call is received from someone whose telephone number has been indicated on a list of numbers referred to as the SCF screening list. Terminating calls from callers whose telephone numbers cannot be identified or have not been indicated on the list are given standard terminating treatment (without selective forwarding). This treatment is determined by the line status and other features on the called party's line.

The SCF screening list is a set of 7- and/or 10-digit Directory Numbers (DNs) for calls that should be forwarded to a remote station. Business group extensions can also be included on the SCF screening list. The structure of the list and methods for updating its contents are described in the *CLASS[SM] Feature: Screening List Editing*, TR-TSY-000220 [1]

SCF should be independent of other Call Forwarding services such as Call Forwarding Variable, Usage Sensitive Call Forwarding, Call Forwarding - Don't Answer, and Call Forwarding - Busy Line. The customer should be able to designate a separate remote DN for each feature: one for SCF, one for Call Forwarding variable, etc. Calls from DNs that are specified on the SCF screening list should be forwarded to the SCF remote station. Calls from DNs that cannot be determined or are not on the list may be forwarded to the remote station designated for the second Call Forwarding service.

2. User Perspective

A customer can initiate procedures for activating, deactivating, modifying, specifying the remote DN, or obtaining a status report for SCF by going off-hook, receiving dial tone, and dialing the SCF access code. The SCF access code should be at least three characters in length. The first character must be "*" while the remaining characters can be any digit 0 through 9. The character string "11" can be used in place of the character "*" for dual-tone multifrequency (DTMF) service and must be used in place of this character for rotary dial service. Each BOC should be able to

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assign these codes on an individual office basis. The suggested access codes for SCF are *63 and *83. Each code should provide the customer with access to the same set of SCF capabilities. This allows BOCs, who currently have customers using *63 and *83 as separate activation and deactivation codes, to continue such use while permitting other BOCs, who are not currently providing screening list features, to advertise just one code as a single access code.

Once either SCF access code has been successfully entered, the customer should receive announcements providing the following information (not necessarily in this order):

- The name of the service (i.e., SCF)

- The current status of SCF (i.e., active or inactive)

- The current size of the customer's SCF list

- The customer's remote DN (when SCF is active)

- Actions and associated dialing codes available to the user.

  — Confirm or change remote DN (when SCF is active)

  — Add entr(y)ies to the list

  — Delete entr(y)ies from the list

  — List review

  — Change status (i. e., active to inactive or inactive to active).

Call attempts to lines that have SCF active should be forwarded to the designated remote station if the calling DN has been specified on the SCF screening list. Forwarding should take place whether the base station is busy or idle. This includes the case when the customer is engaged in a screening list editing session for SCF or any other screening list feature, as long as SCF is active and the calling DN is on the customer's SCF list. When a call has been received and forwarded, a ring reminder is given if the base station is idle.

SCF customers should be able to eliminate and reinstate the ring reminder on a service order basis. A forwarded call cannot be answered at the base station. All forwarded calls will be treated in the same manner as if the forwarding were caused by the Call Forwarding Variable service (see *LATA Switching Systems Generic Requirements (LSSGR)*, TR-TSY-000064, FSD 01-02-1401[2])

Call attempts from DNs that cannot be identified or are not on the SCF screening list should not be forwarded except in accordance with another active Call Forwarding service.

3. Feature Requirements

3.1 Feature Operations

When the customer has successfully dialed one of the SCF access codes, the system should provide the announcements described in Section 2.

If the service is active at the time the access code is dialed, the system should provide an announcement stating the existing remote DN and instructing the customer to confirm it or specify a new remote DN. If a new remote DN is specified, the system should voice back the new remote DN and instruct the customer to confirm it or specify another remote DN. This process should be repeated until the customer specifies the confirm remote DN command. Once this occurs, the

customer may then deactivate the service or enter the list editing level.

If the service is inactive at the time the access code is dialed, the customer may activate the service or enter the list editing level. If the customer attempts to activate SCF, the customer must confirm an existing remote DN or enter and confirm a new remote DN before activation confirmation is provided by the system. The system must also prompt the customer to add an entry to the list if the list is empty before providing activation confirmation to the customer.

If the customer enters the list editing level, he/she then dials command codes that direct the system to take specific actions. TR-TSY-000220[1] should be consulted for a complete discussion of activation, deactivation, and screening list editing procedures.

3.1.1 Main Feature Operations

Except for response to dialing of the SCF service access code, standard originating treatment applies as described in LSSGR Section 5.2.1.[3]

For terminating treatment, if calling line identification is available for a call terminating at a line that has SCF active, the DN is checked to see if it has been specified on the SCF screening list.

A. If the originating DN for the call has been indicated on the SCF screening list, the system should determine if a call forwarded from the called station to the SCF remote station is still in progress. If a previously forwarded call has an active connection, busy tone should be returned to the calling party. Otherwise, the call connection should be completed to the remote station and ring reminder should be applied at the base station if it is idle. Forwarding should take place whether the base station is busy or idle. This includes the case when the customer is engaged in a screening list editing session for SCF or any other screening list feature, as long as SCF is active and the calling DN is on the customer's SCF list. The terminating treatment for forwarded calls should be consistent with that defined for Call Forwarding Variable service in LSSGR FSD 01-02-1401.[2] When a call is forwarded because of SCF, the originating calling line identification should be forwarded to the remote station.

   A telephone number can exist on an SCF list in an extension format (when applicable), in its 7/10 digit format, or in both formats (i.e., two entries on the list). When the DN of an incoming call is compared to the customer's SCF list, a match should be found if that DN exists on the list in extension format only, in 7/10 digit format only, or in both formats; regardless of the format of the incoming DN (extension or 7/10 digits).

B. If the calling DN cannot be identified or has not been designated on the SCF screening list, standard terminating treatment should be given as described in LSSGR Section 5.2.2.[3]

Interactions with other line features may cause additional differences in terminating treatment as described in Section 3.8.

3.1.2 Release Treatment

The standard release treatment applies as described in LSSGR Section 5.2.3.[3]

3.1.3 Interrupt Treatment

Standard interrupt treatment requirements apply as described in LSSGR Section 5.2.4.[3]

3.1.4 Error Treatment and Abnormal Events

Responses to unexpected customer actions during feature activation/deactivation or screening list editing are described in TR-TSY-000220.[1] Responses to irregular user actions during access of SCF (i.e., *63 or *83) are described below.

A. *System Response to Irregular User Actions*

Standard error treatment (i.e., reorder tone, busy tone, or BOC specified announcement) should be given if the customer dials a service access code that does not exist or is not permitted on the customer's line. If the customer dials an invalid access code, standard error treatment is provided. If the customer attempts to access SCF but is not allowed access, standard error treatment is given.

When specifying a remote DN, an error announcement (defined in TR-TSY-000220[1]) should be provided if the customer dials one of the following digit sequences:

1. A prefix "0".

2. Any number in the "N11" series.

3. An unassigned office or area code. This check should be made for remote DNs served by the base station office only. No checks should be made for remote DNs that are not served by the base station office. That is, no Signaling System 7 queries should be made to check this condition.

4. An unassigned directory number in the base station office.

5. The base station DN.

6. A "950-WXXX" number.

7. An invalid speed calling code.

8. A free number within the base station office (i.e., a line that no call is chargeable to). No checks should be made for free numbers outside of the base station office. That is, no Signaling System 7 queries should be made to check this condition.

9. A semi-restricted terminating number when the SCF user is outside the business group of the user that is semi-restricted terminating.

10. A fully-restricted terminating number when the SCF user is outside the business group of the user that is fully-restricted terminating, or the SCF user is the attendant of the business group.

11. A number outside of the SCF user's business group when the SCF user is semi-restricted originating.

12. A number outside of the SCF user's business group or associated with the attendant of the business group when the SCF user is fully-restricted originating.

13. An intercepted number (temporarily out of service).

14. A number reached via tie trunks.

15. A number reached via an Outwats Simulated Facility Group.

16. A number reached via private facilities.

17. A number that is code restricted or toll restricted.

Additional restrictions on Call Forwarding remote stations are included in Section 3.8.

If an invalid number or partial dial is received for the remote DN, an announcement should repeat the digits dialed and inform the customer that an error has been made. If a timeout occurs, no error announcement should be provided. In either case, the announcement instructing the customer to dial the remote DN should be repeated and the customer should

be allowed to attempt to dial the remote DN again. There is a limitation regarding the number of times a customer can timeout or enter an invalid digit sequence when the system is expecting a remote DN. Each limitation should be a separate BOC settable parameter. Once either limitation has been reached, an announcement is provided to the customer stating the current status of SCF and, if the service is active, the current remote DN. The customer is then asked to hang up, consult written instructions, and try again later. The customer's line should be idled without delay upon completion of this announcement. Complete details concerning these procedures are addressed in TR-TSY-000220.[1]

B. *System Response to Internal Failures*

Calls should not be forwarded if there is a failure with the SCF feature or if the terminating office is unable to screen incoming calls because of a system failure.

Additional system responses to internal failure may result from overload conditions and are described in Section 3.2.7.

3.2 Internal Call Processing Controls

3.2.1 *Connections*

The customer should be connected to a system that is capable of responding to control procedure command codes once the SCF service access code has been received. This system should be able to detect customer dialing to record feature activation/deactivation and modifications to screening list contents. The system should also be capable of providing the announcements necessary to verify feature status, screening list contents, and remote DN. Further requirements for feature control procedures are described in TR-TSY-000220.[1]

For calls terminating to a line on which SCF is active, standard connections apply as described in *LSSGR* Section 5.3.1.[3]

3.2.2 *Class of Service*

The telephone company craftperson should have the capability to assign SCF on an office basis (i.e., SCF is assigned to all lines in the office) and to deny SCF on an office basis (i.e., SCF is denied to all lines in the office).

If an office is initialized so that SCF is assigned on an office basis, then the craftperson should have the capability to (1) deny SCF to individual lines and (2) deny SCF to groups of lines on a class of service basis.

If an office is initialized so that SCF is denied on an office basis, then the craftperson should have the capability to (1) assign SCF to individual lines and (2) assign SCF to groups of lines on a class of service basis.

SCF should be allowed to be assigned to denied originating treatment and manual lines. However, activation, deactivation, the SCF screening list, and remote DN must be specified by the customer via the service order process only. No SLE access is permitted. Denied terminating treatment lines should be restricted from accessing SCF.

An indicator should be available for each line to specify feature blocking for usage-sensitive services. BOCs/IDCs should have the capability, on an office basis, to include SCF in the list of usage-sensitive features to which the blocking indicator applies.

SCF should be available to customers with either rotary or DTMF service.

9 2.3 Code Interpretation

A customer can initiate procedures for activating, deactivating, modifying, specifying the remote DN, or obtaining a status report for SCF by going off-hook, receiving dial tone, and dialing the SCF access code. The SCF access code should be at least three characters in length. The first character must be "*" while the remaining characters can be any digit 0 through 9. The character string "11" can be used in place of the character "*" for dual-tone multifrequency (DTMF) service and must be used in place of this character for rotary dial service. Each BOC should be able to assign these codes on an individual office basis. The suggested access codes for SCF are *63 and *83. Each code should provide the customer with access to the same set of SCF capabilities.

An announcement system guides the customer through each step of the SCF procedures. A detailed description of these procedures is provided in TR-TSY-000220.[1]

9.2.4 Screening

The calling DN should be obtained when possible for each terminating call to a line with SCF. Terminating treatment of the call should be based on whether or not the calling DN matches an entry on the called party's SCF screening list as described in Section 3.1.1. Procedures to create and modify the screening list are described in TR-TSY-000220.[1]

9.2.5 Routing

If the calling party DN is on the customer's list and SCF is active, the call should be routed to the remote station designated by the SCF customer. If the calling party DN is not present on the customer's list, SCF should have no effect on call routing.

9.2.6 Charge Treatment Determination

The ability to bill for SCF on a subscription or usage-sensitive basis, or both, should be provided. For subscription billing, a service order is needed and customers would be charged a flat monthly rate. For usage-sensitive billing, billing record (s) should be written to indicate each of the following actions:

- SCF Activation

- SCF Deactivation

- SCF Screening List Activated (new SCF list created in an editing session)

- SCF Screening List Deactivated (existing SCF list deleted in an editing session)

- SCF Screening List Accessed (SCF list existed throughout editing session)

See Section 3 5 6 for specific billing formats.

Any AMA records generated for the customer that result in billing for the forwarded leg of a call should have a call forwarding indicator as described in *LSSGR* FSD 01-02-1401.[2]

9.2.7 Overload

The customer should be given standard error treatment (i.e., reorder tone, busy tone, or BOC specified announcement) if a system capable of providing SCF control procedures is not accessible when the service access code is dialed.

In addition, standard error treatment should be provided to the caller if it is determined that a call should be forwarded but resources are not available. If, however, resources required to determine whether the terminating call will be forwarded are not available, the call should be completed to the base station.

3.3 Signaling

3.3.1 Customer Loop

Standard customer loop requirements apply as described in *LSSGR* Section 6.1.2.[4]

3.3.2 Customer Signaling

Supervisory signaling applies as described in *LSSGR* Section 6.2.1.[4]

Standard office to customer supervision applies as described in *LSSGR* Section 6.2.2.[4]

The customer should initiate control of the SCF feature by dialing the SCF service access code (see Section 3.2.3). Announcements should be given to the customer indicating the feature name, the feature status (active/inactive), the number that calls are forwarded to (if applicable), the screening list size, and subsequent actions and associated dialing codes available to the user.

The system will expect to receive feature command codes at certain times during SCF control procedures. At such times, the customer may dial commands to activate/deactivate the service, specify or change the remote DN, and to verify or change screening list contents. If SCF is not active when the service access code is dialed, the customer should be given instructions describing how to activate the service and how to edit an existing SCF screening list. If SCF is active, the customer should be given instructions describing how to confirm the existing remote DN and specify a new remote DN. Once a remote DN has been confirmed, the customer should be given instructions describing how to deactivate the feature and to edit an existing SCF screening list. Any digits received should be interpreted accordingly. Command codes to be used for activating, deactivating, creating and updating the SCF screening list are described in TR-TSY-000220.[1]

A ring reminder should be applied at the base station when a call is received and forwarded, while the base station is idle. SCF customers should be able to eliminate and reinstate the ring reminder on a service order basis. The ring reminder is defined as a 500-ms burst of power ringing. Calls that are not forwarded and are terminated at the base station should be given standard office-to-customer information signaling as described in *LSSGR* Section 6.2.4.[4]

Whenever the SCF service access code is dialed from a line capable of accessing the feature, the system should respond with announcements providing the following information (not necessarily in this order)

- The name of the service (i.e., SCF)

- The current status of SCF (i.e., active or inactive)

- The current size of the customer's SCF list

- The customer's remote DN (when SCF is active)

- Actions and associated dialing codes available to the user.

  — Confirm or change remote DN (when SCF is active)

  — Add entr(y)ies to the list

  — Delete entr(y)ies from the list

  — List review

  — Change status (i.e., active to inactive or inactive to active).

An announcement system guides the customer through each step of the SCF procedures. A detailed description of these procedures is provided in TR-TSY-000220.[1]

It is desirable that these announcements be standardized (the suggested wording is subject to change). All announcements, however, should be changeable by BOC personnel on a per-office basis. All announcements to be used during SCF control procedures are suggested in TR-TSY-000220.[3] The announcement system to be used for this feature is described in *LSSGR* FSD 20-06-0600.[5]

3.3.3 Intersystem DC Signaling

Standard intersystem DC signaling applies as described in *LSSGR* Section 6.3.[4]

3.3.4 Intersystem AC Signaling

3.3.4.1 Common Channel Signaling

The screening list editing capability used by this feature requires that intersystem signaling be used to verify that DNs outside the originating office and to be entered on the customer's SCF screening list are valid and are associated with an office that has the necessary signaling connectivity. Intersystem signaling should be provided by Signaling System 7 (SS7), as specified in *Bell Communications Research Specification of Signaling System Number 7, TR-NPL-000246.*[8] This feature should be capable of functioning on an intraoffice basis if the office is not served by a CCS network. Refer to TR-TSY-000220[1] for SS7 procedures related to the verification of screening list entries.

If an originating office is equipped with SS7, it should include the calling DN in the address information field within the calling party address parameter of the Initial Address Message (IAM) for all BOC intraLATA interoffice calls that it places over trunks served by SS7. In addition, if the calling party address is a private number, the address presentation restriction indicators octet should be included with bit A set to "1" (i.e., "presentation restricted"). A terminating office should expect to find the calling party DN in the IAM if the intraLATA call setup path does not involve an interexchange carrier and is served by SS7 in its entirety. *Switching System Requirements for Call Control Using the Integrated Services Digital Network User Part (ISDNUP)*, TR-TSY-000317.[7] states that the calling DN is a required field in the IAM.

If the calling party address information is required at the terminating office (i.e., a customer at that office has SCF active), but is not included in the IAM, then no additional SS7 queries should be made to obtain the desired information. Call processing should proceed as if the calling DN had not been included on the customer's SCF screening list.

3.4 Transmission

Transmission requirements are described in *LSSGR* Section 7.[8] Further transmission requirements for forwarded calls are described in *LSSGR* FSD 01-02-1401.[2]

3.5 Administration

3.5.1 Service Changes

3.5.1.1 Telephone Company (System)

The telephone company craftperson should have the capability to assign SCF on an office basis (i.e., SCF is assigned to all lines in the office) and to deny SCF on an office basis (i.e., SCF is denied to all lines in the office).

If an office is initialized so that SCF is assigned on an office basis, then the craftperson should have the capability to (1) deny SCF to individual lines and (2) deny SCF to groups of lines on a class of

service basis.

If an office is initialized so that SCF is denied on an office basis, then the craftperson should have the capability to (1) assign SCF to individual lines and (2) assign SCF to groups of lines on a class of service basis.

An indicator should be available for each line to specify feature blocking for usage-sensitive services. BOCs/IDCs should have the capability, on an office basis, to include SCF in the list of usage-sensitive features to which the blocking indicator applies.

A service order is also used to change whether or not Call Forwarding is allowed over a particular trunk group. (See *LSSGR* FSD 01-02-1401). [2]

3.5.1.2 Customer

SCF should be available on both a subscription and a usage-sensitive basis. A service order is required for a subscription. The customer initiates control of the SCF screening list contents and the activation and deactivation of the service by dialing the SCF service access code. Complete control procedures are described in TR-TSY-000220.[1]

3.5.2 Installation

This feature requires using a CCS network to obtain the calling party DN and to verify the validity of DNs (if this feature is to operate on an interoffice basis). Equipment should be installed as necessary to provide the ability to recognize and respond to customer control commands for activation, deactivation, and screening list editing. In particular, the ability should be provided to offer tones and voice announcements interactive with the reception of customer dialing.

3.5.3 Person/System Interface

BOC personnel should be able to substitute alternative announcements to those described in Section 3.3.2 and in TR-TSY-000220. [1]

Other parameters associated with the SCF screening list should be adjustable by BOC personnel as described in TR-TSY-000220.[1]

In addition. BOC personnel should be able to generate output messages that summarize the status of the SCF feature on a per-line and per-office basis. The information that should be provided in these messages is described in Section 3.6.3.

There should be a recent change method to set or reset the "Usage Sensitive Features Denied" data item for a line or group of lines. There should also exist the ability to obtain a list of all lines having "Usage Sensitive Denied" set.

3.5.4 Traffic Measurements

The following traffic measurements should be provided on a per-office basis:

A. Hourly peg counts and usage counts with a usage scan rate of 1 per 10 seconds for SCF screen editing, for attempts to invoke control procedures as a result of dialing either SCF service access code (*63 or *83).

B. Hourly peg counts for the number of times SCF is activated to a legitimate remote DN.

C. Hourly peg counts for the number of calls forwarded because of SCF service.

D. Overflow counts for the number of call forwarding attempts that fail because of the unavailability of system resources.

E. Overflow counts for the system and/or any circuits used to provide SCF control procedures.

3.5.5 Maintenance Measurements

The standard maintenance measurements apply.·

3.5.6 Billing and Comptroller

Both subscription and usage-sensitive billing should be available to the BOCs. A service order is required for the subscription option. To bill for SCF on a usage-sensitive basis, an AMA record should be made each time SCF is activated and deactivated, and each time the SCF screening list is accessed, activated, and deactivated.

See Section 3.2.6 for a clarification of these events.

A new structure code 1030 should be used to record an AMA billing record for each of these conditions. By writing a record when SCF is activated and then deactivated, it can be determined how long the feature was active and the customer will be charged accordingly. The length of time the SCF list was stored can be determined by recording the initial creation of the list and when the list is deleted.

See Table 1 for the AMA billing format suggested for usage-sensitive billing of SCF.

3.5.7 Quantities

All lines in an office may have the SCF feature except those having this feature blocked or one of the line types noted in Section 3.9. The maximum number of customers that may have the service active depends on availability of system resources such as service circuits and memory for screening list storage. See TR-TSY-000220[1] for a description of quantities associated with the SCF screening list.

3.5.8 Data Items and Usage

The following data should be kept on a per-line basis:

A. *Active* - This data item has a value of "yes" or "no" and is changed by customer activation and deactivation of the service.

B. *Screen* - The screen is a list of 7- and/or 10-digit DNs that should be contained in memory, accessible by the switching system. The structure of the screening list and the control procedures to be used by the customer to verify and modify screening list contents are described in TR-TSY-000220.[1]

C. *Remote Station* - This data item is a 7- or 10-digit DN with an optional "10XXX" carrier code.

D. *Denied* - This data item has a value of "yes" or "no" and indicates whether SCF feature blocking applies to the line. The value of this item should be changed only through a service order that either affects or cancels the blocking feature.

3.6 Maintenance

3.6.1 Automated System Maintenance

Automated maintenance procedures should be provided to test the operation of any systems or circuits used by the SCF feature.

9.6.2 Manual System Maintenance

The maintenance center should have the ability to request, on demand, a printout of all lines that have SCF activated and the associated remote DNs as described in Section 3.6.3. In addition, the ability should be provided to activate or deactivate SCF for any line that is not denied service due to the restrictions noted in Section 3.9.

9.6.3 Input/Output Messages

BOC personnel should be able to query the status of the SCF feature on a per-line and per-office basis. The output message that results from such a query should state whether the line is restricted from activating SCF and list the remote DN and all DNs currently being stored on the line's SCF screening list. A separate output message that lists all lines in an office on which SCF is active along with the remote DN associated with each activation should also be provided on request of BOC personnel.

3.7 Performance

Guidelines should be provided to the purchasing BOC that indicate the levels of engineering necessary to meet various performance criteria. It is suggested that each type of service circuit used by SCF be engineered so that connections will be unavailable for no more than 0.01 of Average Busy Season Busy Hour (ABSBH) attempts. Service failures (inability to provide specified terminating treatment or inability to access feature control procedures) should occur for no more than 0.02 of ABSBH service attempts.

3.8 Interactions

Activation of SCF should not depend on the existence of other line features. The interaction of SCF with originating features is described below.

A. *Toll and Code Restrictions*

  The remote DN for SCF is not permitted to be a code/toll restricted number for the customer's line. An announcement should repeat the digits dialed and inform the customer that an error has been made if an attempt is made to specify the remote DN as a restricted number.

B. *Speed Calling*

  Speed calling codes may be used to specify the SCF remote DN (see TR-TSY-000220). [1] The SCF service access code should be allowed as a legitimate Speed Calling list entry.

C. *IC/INC Interconnection*

  — Calls cannot be forwarded to a 950-WXXXnumber.

  — When a call is forwarded using an Interexchange or International Carrier (IC/INC), the ANI of the base station should be provided to the carrier for billing purposes.

  — Calls may not be forwarded outside World Zone 1 except 10-digit North American Numbering Plan calls to Mexico.

Interactions between SCF and other terminating features are listed below. For all cases where SCF takes precedence, a terminating call should be given forwarding treatment if SCF is active and the calling DN has been specified on the SCF screening list. Otherwise, the call should receive standard terminating treatment as determined by line features other than SCF.

A. *Call Forwarding*

SCF should be able to exist on the same line as other Call Forwarding services. (Call Forwarding Variable, Usage Sensitive Call Forwarding, Call Forwarding - Don't Answer, and Call Forwarding - Busy Line). SCF should always take precedence. When SCF and another Call Forwarding service exist on the same line, the remote DNs specified for the respective services may differ and are expected to differ.

If a forwarded call is received at a line that has SCF active, the originating DN (and not a base station DN) should be matched against the SCF screening list for that line. If the originating DN has been indicated on the screening list, the call should again be forwarded, this time to the SCF remote DN specified for the line. See Section 3.9 for restrictions concerning multiple call forwarding sequences.

B. *Distinctive Ringing/Call Waiting*

SCF takes precedence over Distinctive Ringing/Call Waiting. If a line has both services active and calling line identification is available for a terminating call, the SCF screening list should first be checked to determine if call forwarding treatment will be provided. The Distinctive Ringing/Call Waiting screening list should then be checked if the calling DN is not on the SCF screening list.

C. *Selective Call Rejection*

Selective Call Rejection should take precedence over SCF. The calling DN should first be checked to determine if the call will terminate at the called station. If the call is accepted, the calling DN should be matched against the SCF screening list.

D. *Calling Number Delivery*

SCF takes precedence over Calling Number Delivery. The calling DN should not be displayed at the base station when a terminating call is forwarded as a result of SCF.

E. *Bulk Calling Line Identification*

SCF should take precedence over Bulk Calling Line Identification. When both services are active on a line, calling line identification should not be provided for all terminating calls that are forwarded as a result of SCF.

F. *Make Busy Key*

SCF should take precedence over Make Busy Key.

G. *Series Completion*

SCF should take precedence over Series Completion.

H. *Multiline Hunt*

SCF can only be assigned to the multiline hunt group and not to individual members of the group. SCF control procedures should be accessible only from the initial station in the multiline hunt group. SCF takes precedence over the hunting function for terminating calls.

I. *Call Waiting*

SCF should take precedence over Call Waiting. Call Waiting should also be ineffective while SCF control procedures are being used at the terminating station.

J   *Automatic Callback*

If an SCF customer activates Automatic Callback (AC). ringback should always be given to the customer's line and not forwarded. even if the number to which AC was activated is on the SCF list. If a person attempts to activate AC to a line that has SCF active. the AC customer's number is checked against the SCF list. If the number is on the list. AC activation is denied since the status of the remote line cannot be checked. If the number does not match the list. the AC activation is accepted and proceeds normally.

K. *Automatic Recall*

If an SCF customer activates Automatic Recall (AR), ringback should always be given to the customer's line and not forwarded, even if the number to which AR was activated is on the SCF list. If a person attempts to activate AR to a line that has SCF active, the AR customer's number is checked against the SCF list. If the number is on the list, AR activation is denied since the status of the remote line cannot be checked. If the number does not match the list, the AC activation is accepted and proceeds normally.

3.9 Limitations and Restrictions

The effectiveness of the SCF feature depends on calling line identification being available on a substantial proportion of terminating calls.

The telephone company craftperson should have the capability to assign SCF on an office basis (i.e.. SCF is assigned to all lines in the office) and to deny SCF on an office basis (i.e., SCF is denied to all lines in the office).

If an office is initialized so that SCF is assigned on an office basis, then the craftperson should have the capability to (1) deny SCF to individual lines and (2) deny SCF to groups of lines on a class of service basis.

If an office is initialized so that SCF is denied on an office basis, then the craftperson should have the capability to (1) assign SCF to individual lines and (2) assign SCF to groups of lines on a class of service basis.

An indicator should be available for each line to specify feature blocking for usage-sensitive services. BOCs/ IDCs should have the capability, on an office basis, to include SCF in the list of usage-sensitive features to which the blocking indicator applies.

A call may be forwarded to a base station that has SCF activated. If the originating DN has been specified on the SCF screening list. a multiple call forwarding sequence may result. A call should never be forwarded beyond the fifth remote station within a single office. It is also desirable that a given directory number appear only once in a multiple call forwarding sequence to prevent loop around. These limits have been set in an effort to avoid, to the greatest degree possible, tying up the network with a call that is continually undergoing forwarding without charges being issued because of the lack of call completion.

3.10 Timing and Tolerances

Timing to be used during SCF control procedures is described in TR-TSY-000220.[1]

4. Feature Flow Diagram

See all feature-flow diagrams in TR-TSY-000220.[1]

5. Glossary

5.1 List of Acronyms

AC - Automatic Callback

AR - Automatic Recall

CCS - Common Channel Signaling

CLASS - Custom Local Area Signaling Services

CND - Calling Number Delivery

CNDB - Calling Number Delivery Blocking

DN - Directory Number

DRCW - Distinctive Ringing/Call Waiting

DTMF - Dual Tone Multi-Frequency

FSD - Feature Specific Document (part of LSSGR)

IAM - Initial Address Message

LSSGR - LATA Switching Systems Generic Requirements

PBX - Private Branch Exchange

PCI - Protocol Control Indicator

RSS LIN - Remote Switching System Line

SCF - Selective Call Forwarding

SCR - Selective Call Rejection

SS7 - Signaling System 7

5.2 Definition of Terms

Base Station - The station of the customer activating SCF.

Calling Line Identification - Information providing the directory number of the line from which a terminating call has originated.

Control Procedures - The methods used by the customer to activate and deactivate SCF and to verify and modify the SCF screening list contents.

Remote DN - The directory number of the station to which calls are forwarded.

Ring Reminder - A 500 ms burst of power ringing that is provided to the base station when a call is forwarded.

Screening List - A list of 7- and/or 10-digit directory numbers from which calls should be provided with special terminating treatment.

Service Access Code - A code that has been assigned digits of the *XX or 11XX format. Dialing of the service access code in response to dial tone invokes control procedures for the feature associated with the code.

STATE OF TEXAS   )
) ss
COUNTY OF DALLAS   )

AFFIDAVIT OF ANTHONY J. TOUBASSI

I, Anthony J. Toubassi, being duly sworn, declare as follows:

1. I am an Advisory Engineer, Technical Standards Management for MCI Telecommunications Corporation (MCI). For the past five years I have represented MCI in the national and international standards process, and more recently as a member of the Telecommunications Information Networking Architecture (TINA) Consortium technical committee. I have a Master's degree in Electrical Engineering from Northwestern University in Evanston, Illinois, and an MBA degree from Fairleigh Dickinson University in New Jersey. I was employed for twenty-five years in technical positions in the telecommunications industry (AT&T Bell Laboratories, ITT, Alcatel and GTE) prior to joining MCI in 1990. I have been involved in the T1 standards committee since 1985, when the standardization of Common Channel Signaling SS7 and ISDN started. I am my company's representative to the Information Industry Liaison Committee (IILC) since 1992. I have been an active participant in the resolution of issues dealing with Open Network Architecture (ONA), network unbundling and in proposals to enhance the IILC Bylaws and Administrative Procedures in an effort to make the process more effective.

2. I am submitting this Affidavit in connection with the Commission's proceedings in CC Docket No. 95-20, <u>Computer III Further Remand Proceedings; Bell Operating Company Provision of Enhanced Services</u>. In particular, in this affidavit I plan to clarify certain aspects of the IILC work and address misleading statements made by a number of Bell Operating Companies (BOCs) in those portions of their reply comments that respond to the Affidavit of Peter Guggina, attached as Exhibit B to MCI's Comments in CC Docket No. 95-20.

THE BOCS WORK IN CONCERT ON IILC ISSUES

3. Pacific Bell (PacBell) states that the BOCs, as seven separate companies, do not work in concert on forum issues[1] This statement is incorrect. The BOCs are active participants in the work of the IILC, and their representatives coordinate joint positions on issues during and between meetings. This serves to assure that the BOCs' position is well orchestrated on any issue discussion or vote. Collectively, the BOCs have a greater voice than other representatives or industry segments.

4. PacBell's statement on attendance[2] at the IILC meetings does not go far enough to explain the underlying effects of Local Exchange Carrier (LEC) and non-LEC attendance. In spite of the fact that a large number of non-LECs are on the IILC mailing

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[1] PacBell Reply Comments at 49.

[2] <u>Id</u>. at 46.

list, the number of non-LECs that actively participate in the
issue task group work is only three at this time (MCI, ATSI and
AT&T). Recent task group conference call reports show that only
one or two non-LECs attended any of these meetings. The non-LECs
cannot afford to send a large number of representatives to every
meeting or to participate in every conference call on every
issue. The reason is simple: the non-LECs do not have the
monopoly ratebase to fund such activities. In addition, the
non-LEC participants are mostly interested in the resolution of
issues they submit to the IILC, and, consequently, act
independently when issue discussions take place. The interest
diversity of the non-LEC/Enhanced Service Provider(ESP)
participants and their ever-dwindling numbers does not permit the
same level of coordination as that enjoyed by the BOCs and other
LEC interest groups.

5. In such a situation, it is easy to reach "consensus" in
meetings when one non-LEC is faced with a well-coordinated block
of seven BOCs and other LECs. The example cited by PacBell that
"if all seven BOCs agree, but one non-BOC does not, then there is
no decision"[3] is incorrect. My experience in both T1 committees
and the IILC is to the contrary. In T1, many standards have been
approved over MCI's or other non-LECs' objections. In addition,
in the IILC, when MCI objected to the Public Policy section of
Issue #026 (Long Term Unbundling and Network Evolution), MCI was

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[3] Id. at 49.

told to write a letter explaining its objections, to be included in the issue #026 closing documentation. These examples demonstrate that one company's objections do not preclude a consensus on a letter ballot or an issue resolution in the face of a coordinated BOC steamroller.

6. An example of ESP frustration with the IILC process has been evidenced by the action taken by GeoNet Ltd. in requesting the IILC to put its Issue #044 (AIN Access by non-LEC to a Resource Element) on "Hold" status pending Commission action in the Advanced Intelligent Network proceeding (CC Docket No. 91-346). The reason for such a request on the part of GeoNet is the lack of progress on the resolution of its issue, due to the reluctance of the majority of the LECs to submit contributions that describe their AIN architecture plans as they relate to Issue #044. In addition, GeoNet's introduction of a new issue #055 (ISDN Feature Information) was rejected by all the BOCs during several meetings, even after a third rewrite of the scope of the issue statement. Thus, LEC opposition has resulted in this issue remaining on hold status. Progress remains to be seen. These experiences demonstrate that new issues that are not totally aligned with the BOCs' interests and strategies are not accepted by the IILC.

NETWORK UNBUNDLING HAS NOT BEEN ACHIEVED

7. Bell Atlantic stated that "distributed network

technologies, such as intelligent network, in fact increase the amount of network unbundling and have benefited ESPs."[1] This statement is only correct if and when unbundling of the BOC network is attained. At this time, the BOC network is far from being unbundled and open to other network and service providers. NYNEX's claim that under ONA, "fundamental unbundling has substantially been achieved,"[2] is unfounded. NYNEX has not explained how unbundling could have been achieved in its network without full implementation of the recommendations agreed to in Issue #026 (Long Term Unbundling and Network Evolution). The BOC switch architecture, including that of AIN/IN, remains closed to other networks and to third-party providers. In spite of the consensus documentation on Issue #026, the interconnection points requested by the non-LECs in this issue are not available under the IILC "120 day process"[3] or with any certainty in the future. Judging from the level of network unbundling that has been accomplished to date in the BOC network, the BOCs are utilizing the standards and industry fora process to "slow roll" their network unbundling for anti-competitive ends. The recent BellSouth Waiver petition to open its AIN network to third-party providers is a positive measure towards network unbundling, but the Commission should not confuse this limited step with true

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[1] Bell Atlantic Reply Comments at 8.

[2] NYNEX Reply Comments at 2.

[3] PacBell Reply Comments at 52.

network unbundling.[7]

UNBUNDLING ISSUES HAVE NOT BEEN ADDRESSED BY STANDARDS FORA

8. PacBell stated that some technical and operational issues identified in Issue #026 are "referred to other industry bodies with expertise to find solutions."[8] This statement creates the impression that the identified #026 issues are being resolved by other industry fora and standards bodies. The fact is that none of the key technical or standards issues are being addressed by any industry forum or by any expert group. Issue #026 spawned 50 new technical, operational, standards, mediation, and public policy issues[9] that need to be resolved before open access and network unbundling become a reality. Only six of those 50 issues, however, have been submitted to the IILC for resolution. After almost a year, progress on these six issues has been very slow, mainly due to the intransigence of some BOCs.

9. In addition, the IILC has no tracking mechanism with regard to the unresolved #026 issues and is not making any attempt to pursue the resolution of these issues in other

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[7] See MCI's Comments on BellSouth's waiver request, attached hereto as Exhibit A.

[8] PacBell Reply Comments at 53.

[9] See Exhibit B, IILC Issue #026, Section 5d, titled: "Issues Associated with Non-LEC Requests," April 19, 1995.

industry fora. The "IILC Issues and Related Activity Report"[10] submitted by Bellcore at each IILC meeting could serve as a vehicle to track the #026 issues if it were properly focussed and more inclusive. This "Issues Report," in its present form, however, is insufficient because it covers a hodge-podge of regulatory policy activities, rather than focussing on the technical issues related to ONA and network unbundling that the IILC is supposed to address. The six #026 issues that have been submitted to the IILC appear in the Issues Report, but none of the other 44 is included. That convenient omission avoids any public reminder of the lack of BOC activity on those issues. None of the BOCs that actively participated in the #026 Task Group have come forward with any submissions to industry standards bodies in an attempt to expedite resolution of those issues. A bare listing of the other 44 #026 issues in the Issues Report -- revealing a lack of activity -- no doubt would have been more embarrassing for the BOCs, but it would be a useful first step in tracking the progress, or lack thereof, on each of those issues.
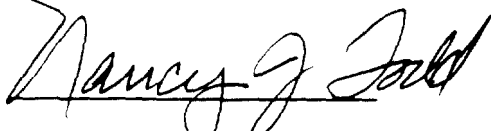
10. Thus, the fate of the remaining issues is undetermined at this point. The newly created issues could be used by the BOCs to delay unbundling of their network to potential competitors. The fact remains that even if the targeted industry

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[10] See Exhibit C, "IILC Issues and Related Activity Report", September 22, 1995.

fora start to deal with the relevant #026 issues, it will be practically impossible for the IILC in its present structure to manage such an activity, and it will take years before any #026 level of open network materializes.[1]/ This is precisely why a national policy for an #026 unbundling is called for, in order for the ESPs and the network providers to attain access to an unbundled local network and also reach an achievable level of national uniformity.

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Anthony J. Toubassi

Subscribed and sworn to before me

this 24th day of April, 1996

_____
Notary Public

NANCY J. TODD
Notary Public
State of Texas
Commission Expires 6-20-99

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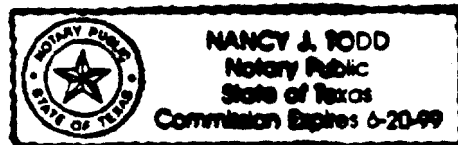
[1]/ The IILC structure could be changed to enable it to manage such a task if the dominant LECs allowed it.

EXHIBIT A

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of:)
)
)
Request for Part 69 Waiver of   )
BellSouth Telecommunications, Inc.   )

Comments of MCI

MCI Telecommunications Corporation (MCI) hereby submits its

comments on the Petition for Waiver filed on December 8, 1995 by BellSouth

Telecommunications, Inc. (BellSouth). Because there are customer requests

for the optional services BellSouth seeks to offer, and because BellSouth's

proposal does not appear to favor one third party, MCI does not oppose grant

of this waiver. However, MCI urges the Commission expeditiously to

complete the Advanced Intelligent Network (AIN) rulemaking (CC Docket No.

91-346) so that full AIN network unbundling can take place.

I.   BACKGROUND

BellSouth's Part 69 waiver proposes to allow third parties access to its

Service Management System (SMS) Interface, which BellSouth claims will

allow third parties to create their own AIN-based services. BellSouth would

give third parties access to Advanced Intelligent Network (AIN) signaling